REMARKS

This is intended as a full and complete response to the Office Action dated November 17, 2004, having a shortened statutory period for response set to expire on February 17, 2005. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-20 are pending in the application. Claims 1-26 remain pending following entry of this response. New claims 21-26 have been added to recite aspects of the invention. Applicants submit that the amendments and new claims do not introduce new matter.

Claim Objections

Claim 1 is objected to because of the following informalities: Claim 1 recites "an antifuse structure in a substrate comprising: forming a conductive region on the substrate". Claims 2-9 are objected to because they depend on objected claim 1.

Claim 1 has been amended to recite forming conductive and nonconductive regions "in" a substrate as suggested by the Examiner. Accordingly, Applicants respectfully request withdrawal of this objection.

Claim Rejections - 35 USC § 102

Claims 1-15 and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by *Bertin et al.* (U.S. Patent 6,812,122, hereinafter *Bertin*). Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim,... In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Bertin* does not disclose "each and every element as set forth" in the rejected claims. For example, referring first to claim 1, *Bertin* does not disclose forming

a nonconductive region adjoining a conductive region wherein first and second lateral boundary surfaces are in facing relationship and form a common interface on which a dielectric layer is deposited. In contrast, the lateral surfaces of the conductive region (204) and nonconductive region (214) disclosed in *Bertin* are separated by a dielectric layer (212/216). Further, the dielectric layer 212/216 does not cover a second upper surface of the nonconductive region (214), as claimed.

For similar reasons, *Bertin* does not disclose "each and every element as set forth" in independent claims 10 and 14. Accordingly, Applicants submit claims 1, 10, 14 and their dependents are patentable over *Bertin* and respectfully request withdrawal of this rejection.

Claim Rejections - 35 USC § 103

Claims 10-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Takagi et al.* (U.S. Patent 5,625,219, hereinafter *Takagi*). Applicants respectfully traverse this rejection.

The Examiner takes the position that Takagi discloses in Figures 1-6 and respective portions of the specification an antifuse and an inherent method of using the antifuse as claimed. Specifically, the Examiner states that *Takagi* discloses an antifuse, comprising:

> a first conductive region (62), the first conductive region defining a first upper surface (62US) and a first lateral boundary surface (SS) which meet at an angle (62C) to form an edge;
>
> a nonconductive region (7B) adjoining the first conductive region (62), the nonconductive region defining a second upper surface and a second lateral boundary surface (SS); wherein the first and second lateral boundary surfaces are in facing relationship and form an interface (generally indicated as SS); and
>
> a dielectric layer (7A) disposed over at least a portion of the first upper surface (62US) of the first conductive region and at least a portion of the edge (62C), whereby an area of relatively increased field strength is produced during application of a programming voltage to form a breakdown channel (71) in the dielectric layer; and a second conductive region (10) on the dielectric layer.

Applicants submit, however, that the conductive layer (62) and nonconductive layer (7B) are formed *on* the substrate and not *in* the substrate (see column 9 lines 17-22 of *Takagi*), as claimed.

Accordingly, Applicants submit claims 10, 14, and their dependents are patentable over *Bertin* and respectfully request withdrawal of this rejection.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

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